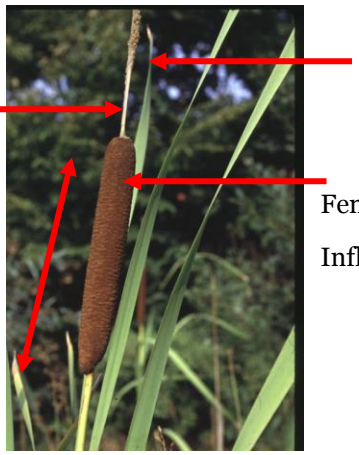
Standard Methods for Measuring Cattail Plants in the Field

➔ Measure the following in centimeters:



1. Plant Height

   Measure from base of plant at soil level (even if under water) to the tip of the longest leaf.

2. Leaf Width

   Measure the widest leaf at its widest point

3. Female Inflorescence Length

   Measure the length of the cigar-shaped part of the plant that produces seeds.

4. Female Inflorescence Width

   Measure the width of the female inflorescence at its widest point.

5. Gap Length

   Measure the distance between the male and female inflorescence.

6. Water Depth

   Measure if water is present. If soil is saturated, enter 0.

➔ Cattail Pollen Collection and Analysis

Why collect cattail pollen? Pollen form and size is unique to plant species. Many paleobotanists drill cores in peat in order to find out what kinds of plants existed in the

past several thousand years. Plant pollen can be analyzed under a microscope to determine what species existed in the past at a location. It can also be correlated with climate change, since plants are fairly sensitive to temperature changes, especially cooling or warming of winter temperatures. Temperatures are associated with "plant hardiness zones" which the US Department of Agriculture uses to advise people which plants to grow at a particular latitude, in accordance with temperatures of the latitude.

There are three species of cattails in the U.S.: *Typha latifolia* (broad leaf cattail*), T. domingensis* (southern cattail), and *T. angustifolia* (narrow leaf cattail). The last one is considered an exotic introduced from Europe during the mid 1800s. The other two are native to North America. The southern cattail is more restricted to southern climates and is the common species in S. Florida.

However, researchers (Travis et al. 2010) have documented that hybridization occurs among these species. One of the consequences of plant hybrid formation is increased vigor of the plants, hence they can be more invasive than their parent species. Researchers are now testing this idea out using experiments on their growth and evaluating the genetic makeup of the plants using forensic techniques such as DNA molecular markers.

REFERENCES:

Travis, S.E., J.E. Marburger, S. Windels, and B.Kubátová. 2010. Clonal diversity and hybridization dynamics of invasive cattail (Typhaceae) stands in the Great Lakes Region of North America. Journal of Ecology 98:7-16.